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Media Advisory

TARDEC

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UGV Hybrid Fuel Cell System Completes Successful Test

WARREN, MI – U.S. Army Tank Automotive Research, Development and Engineering Center (TARDEC) unmanned ground vehicles (UGV) and Adaptive Materials, Inc., recently completed successful testing of a hybrid fuel cell system. The hybrid system combines Adaptive Materials' fuel cell system with a lithium battery designed to deliver performance and duration.

The 2-year project proved that Adaptive Materials' fuel cell system can power small robots across various terrains to conduct surveillance and other mission-critical operations. Employment of robots help keep Soldiers out of harm's way, letting the machines performs the dangerous "snoop and scoop" mission.

With support from the Defense Advanced Research Projects Agency, the proof-of-concept testing took place at Southwest Research Institute®, an independent facility in San Antonio, TX. An Adaptive Materials' solid oxide fuel cell system powered an iRobot® PackBot® across a number of militarily relevant terrains.

Adaptive Materials is continuing work to deliver a fuel cell system for small ground robots that will power a vehicle for more than 12 hours at a time for longer endurance during missions. Current Lithium Ion batteries are good for only around 2 hours.

The Department of Defense (DOD) has deployed more than 5,000 unmanned systems throughout the world on various missions, and TARDEC's Robotics Center of Excellence synergizes the research, development, engineering, acquisition, logistics and support for each robot in theater today. Within the next year, DOD estimates more than 10,000 robots will be deployed Worldwide to support U.S. forces.

"Incorporating fuel cells into UGVs allows us to maximize operational endurance and increase available mission power," TARDEC's National Automotive Center Team Leader for Advanced/Alternative Propulsion Technologies Erik Kallio explained. "These systems boost the utility of an already successful platform."

Note: There is one photo available for use with this release. Caption information follows. To download the photos, go to http://www.tardec.info/pressreleases/.

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TARDEC-PR-0828_1_PackBot.jpg
An iRobot® PackBot® similar to the one pictured was part of a recent successful hybrid fuel cell system test. The PackBot has several missions, including explosive ordnance disposal, route clearance, engineering support, reconnaissance and surveillance. This TARDEC-designed robot can be controlled with two "puck" controllers or with a more Soldier-friendly PlayStation® 2-like controller. It is currently being used in support of *Operations Iraqi* and *Enduring Freedom*. (Photo courtesy of iRobot.)

TARDEC is the Nation's laboratory for advanced military ground systems and automotive technology. A leading technology integrator for the U.S. Army Materiel Command's Research Development and Engineering Command (RDECOM), TARDEC is headquartered at the Detroit Arsenal in Warren, MI, located in the heart of the world's automotive capitol. TARDEC is a major element of RDECOM and partner in the TACOM Life Cycle Management Command. As a full life-cycle engineering support provider-of-first-choice for all DOD ground combat and combat support weapons and vehicle systems, TARDEC develops and integrates the right technology solutions to improve Current Force effectiveness and provide superior capabilities for the Future Force. TARDEC's technical staff leads research in ground vehicle survivability; mobility/power and energy; robotics and intelligent systems; maneuver support and sustainment; and vehicle electronics and architecture. TARDEC develops and maintains ground vehicles for all U.S. Armed Forces and numerous federal agencies.

For additional information about TARDEC's forthcoming developments and other technologies, please contact Mike Roddin at Mike.Roddin@us.army.mil.